THE OCCURRENCE OF BULGARIA PLATYDISCUS IN CANADA

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(With Plate 14)

Between May 9 and 15 of this year, collections of a rather rare and remarkable fungus were made at Val de Bois, P. Q., in the valley of the Lièvre River by Mrs. R. A. Inglis and Mrs. H. T. Güssow. The plants which were collected—15 to 20 in number—were gregarious in habit, occurring within the space of a few square feet, and nowhere else could others be found. They were growing beneath some coniferous trees in a bed of needles and humus, and from a distance they appeared like small stumps of young black birches—perfectly flat tops from one to two inches above the ground. At this time they were immature.

When the plants were received at this laoratory, several were placed in a moist chamber and allowed to come to maturity. In size, the apothecia varied from 6–10 cm. in width by 4–8 cm. in height. They were globose, sessile, dull-brownish-black in color, spongy in texture and furrowed both vertically and horizontally. Attached to the base were a few fine, branched, rhizomorph-like strands. The exterior of the apothecia was covered by a dense, felty layer of dark-brown hyphae, up to 400 μ in length and 10 μ in diameter, multiseptate and somewhat constricted at the septa. These hyphae arose from the outer side of a single row of very dark brown, rounded, pseudoparenchymatous cells. Arising from the inner side of this same row of cells, and forming a tangled network in the colorless jelly-like mass which occupied the whole interior of the apothecia, were innumerable, slender, hyaline hyphae, 4–5 μ in diameter. These assumed the most fantastic tendril-like forms and showed very curious connections. A spiral formation of these hyphae was very common. Probably their function is to give stability to the jelly-like contents of the apo-

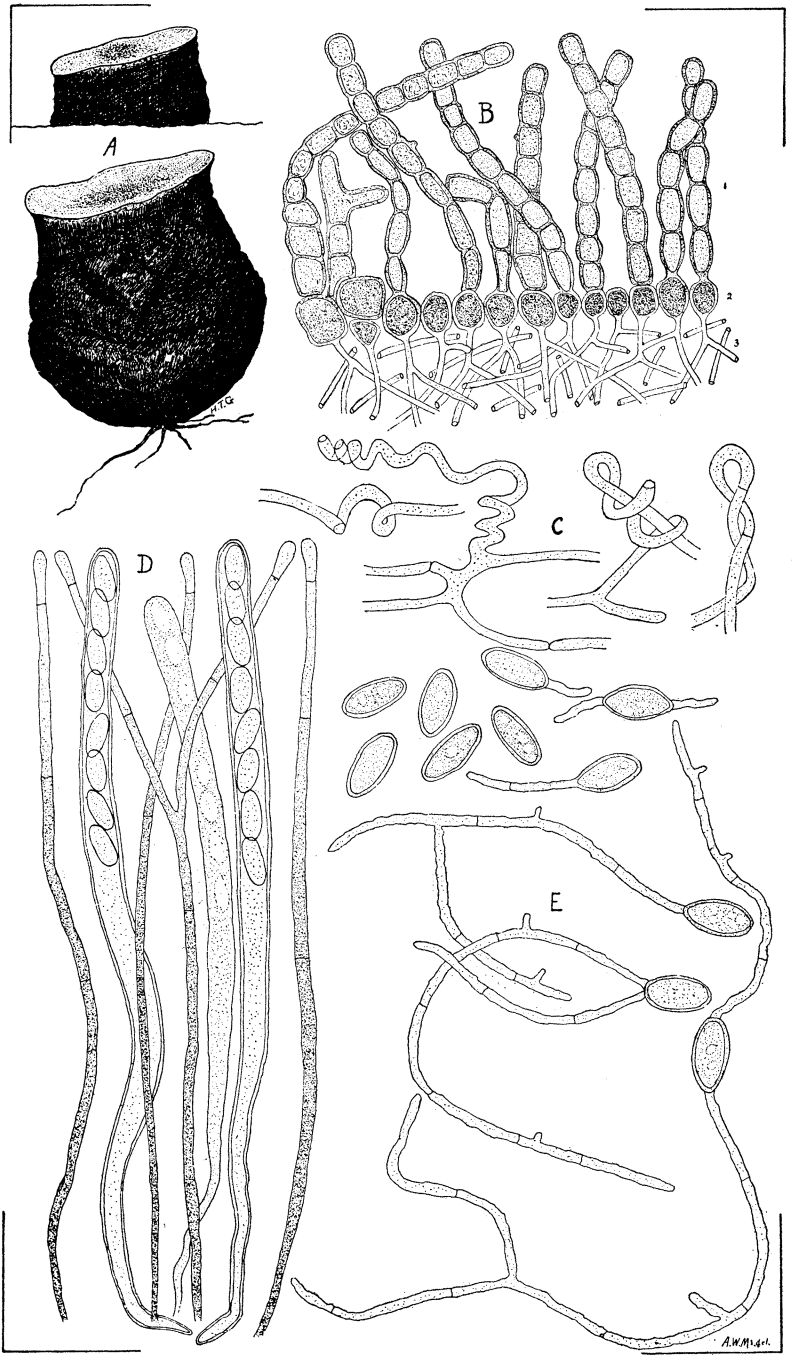
thecia and the spiral and other irregular formations are to allow for expansion of the apothecia due to growth. The hymenium was deep-olive-green to black in color, velvety in texture, sinuate in outline and slightly concave. The asci were cylindrical, rounded at the tops, up to 425 μ long, 15 μ broad, and 8-spored. The spores were ellipsoid, smooth, subhyaline, 1-celled, 28–34 μ by 11–15 μ, uniseriate. The paraphyses were septate, rarely branched, colorless and slightly swollen at the tips, downward becoming brown, 5 μ in diameter.

In an attempt to obtain pure cultures of the fungus, poured plates of nutrient media were placed over pieces of the hymenium which were discharging spores, but every plate became contaminated, probably because foreign organisms became attached to the spores as they passed out through the tips of the asci. This, however, did not prevent a study of the germination of the spores, which occurred in 12–15 hours. Two different media were used —potato agar and Czapek's agar.[1] Upon the latter the germination percentage was very high and almost in every case it was bipolar, while upon the potato agar the germination percentage was low and usually but one germ tube was produced. The high germination percentage resulting from the use of Czapek's agar suggests its use in the case of spore germination in certain of the higher fungi where the spores are very resistant. The spores also germinated freely in tap water, though usually but one germ tube was produced.

[1] Distilled water ..... 1000.00 c.c. Ferrous sulphate ..... 0.01 gr.
Magnesium sulphate ... 0.50 gr. Sodium nitrate ..... 2.00 gr.
Dipotassium phosphate. 1.00 gr. Cane sugar ..... 30.00 gr.
Potassium chloride .... 0.50 gr. Agar ..... 15.00 gr.

Regarding the systematic position of this form, the writer believes that he is correct in naming it *Bulgaria platydiscus* Casp. It agrees very closely with the admirable description of *Sarcosoma globosum* var. *platydiscus* Casp. given in Rabenhorst.[2] In the appendix of this volume, Rehm writes of *Sarcosoma platydiscus* Casp.: "Nachdem die Beschreibung von *S. globosum* völlig verschiedene Sporen erweist, ist dieser Pilz also selbst-

[2] Rehm in Rabenhorst's Kryptogamen-Flora 5: 98. 1896.



BULGARIA PLATYDISCUS CASP.

ständige Art zu erachten." The spore measurements given for *S. globosum* are 8–10 μ long and 5–6 μ wide. Sarcosoma and Bulgaria are synonymous.

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EXPLANATION OF PLATE 14

A, young and mature apothecia of *Bulgaria platydiscus*; *B*, section through the wall of the apothecium showing (1) the felty layer of brown, multiseptate hyphae, (2) the single row of rounded, pseudoparenchymatous cells, and (3) the network of hyphae which permeates the jelly-like contents of the apothecium; *C*, drawings to show a few of the curious forms assumed by the hyphae in *B*, 3; *D*, asci and paraphyses, the tips of the latter slightly club-shaped; *E*, some mature spores and various stages in their germination.